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RAW SEQUENCE LISTING

DATE: 04/11/2002

PATENT APPLICATION: US/09/915,706A

TIME: 12:47:49

Input Set : A:\5112.app

Output Set: N:\CRF3\04112002\I915706A.raw

3 <110> APPLICANT: NELSON, DAVID R.
5 <120> TITLE OF INVENTION: A LIVE, AVIRULENT STRAIN OF V. ANGUILLARUM THAT
6 PROTECTS FISH AGAINST INFECTION BY VIRULENT V.
7 ANGUILLARUM
9 <130> FILE REFERENCE: 5112
11 <140> CURRENT APPLICATION NUMBER: 09/915,706A
12 <141> CURRENT FILING DATE: 2001-07-26
14 <160> NUMBER OF SEQ ID NOS: 4
16 <170> SOFTWARE: PatentIn Ver. 2.1
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 3588
20 <212> TYPE: DNA
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25 <222> LOCATION: (3572)
26 <223> OTHER INFORMATION: a, t, c, g, other or unknown
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92 <211> LENGTH: 463
93 <212> TYPE: PRT
94 <213> ORGANISM: Vibrio anguillarum
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101 20 25 30
103 Arg Pro Leu Arg Asn Glu Phe Asn Val Ala Gln Thr Ala Leu Arg Lys
104 35 40 45
106 Leu Ser Gln Asn Pro Ser Ala Asp Glu Arg Asp Ala Leu Gln Glu Ala
107 50 55 60
109 Cys Leu Asn Lys Trp Lys Ile Leu Ser Asp Ser Leu Tyr Glu Gln Phe

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115	Gln	Phe	Leu	Leu	Asp	Thr	Thr	Leu	Glu	Ser	Ala	Ala	Asn	Ser	Leu	Glu
116				100					105					110		
118	Trp	Leu	Ala	Asp	Leu	Ser	Glu	Lys	His	Trp	Asp	His	Leu	Asn	Pro	Val
119			115					120					125			
121	Leu	Pro	Val	Glu	Thr	Leu	Lys	Ser	Asp	Asp	Asp	Lys	Gly	Lys	Glu	Arg
122		130					135						140			
124	Glu	Gln	Ala	Asp	Ala	Lys	Val	Lys	Ala	Phe	Phe	Gln	Leu	Val	Gly	Asp
125	145					150				155					160	
127	Ser	Glu	Glu	Ser	Ser	Ile	Leu	Tyr	Ala	Pro	Val	Leu	Gln	Leu	Pro	Leu
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130	Val	Gly	Glu	Val	Thr	Phe	Phe	Asp	Phe	Gln	Ser	Ala	Glu	Arg	Lys	Gly
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134			195					200					205			
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137		210					215					220				
139	Gln	Leu	Asp	Arg	Leu	Ser	Ala	Leu	Val	Ser	Thr	Lys	Cys	His	Ser	Leu
140	225					230				235					240	
142	Gly	Ser	Gln	Ser	Thr	Asn	Phe	Gly	Phe	Ala	Lys	Ser	Leu	Leu	Thr	Arg
143				245					250						255	
145	Val	Glu	Asn	Ala	Leu	Val	His	Leu	Ser	Gly	Ile	Lys	Leu	Ala	Pro	Lys
146			260						265					270		
148	Ala	Glu	Ala	Lys	Thr	Val	Glu	Gln	Glu	Val	Ala	Glu	Ser	Ser	Val	Ser
149			275					280					285			
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152		290					295					300				
154	Pro	Met	Ala	Ser	Glu	Gln	Ala	Gln	Thr	Val	Ser	Gln	His	Leu	His	Ala
155	305					310					315				320	
157	Gly	Asn	Leu	Ser	Glu	Leu	Gly	Asn	Leu	Asn	Asn	Met	Asn	Arg	Asp	Leu
158				325					330					335		
160	Ala	Phe	His	Leu	Leu	Arg	Glu	Val	Ser	Asp	Tyr	Phe	Arg	Gln	Ser	Glu
161				340					345					350		
163	Pro	His	Ser	Pro	Ile	Ser	Phe	Leu	Leu	Glu	Lys	Ala	Ile	Arg	Trp	Gly
164			355					360						365		
166	Tyr	Leu	Ser	Leu	Pro	Glu	Leu	Leu	Arg	Glu	Met	Met	Ser	Glu	Gln	Asn
167		370					375						380			
169	Gly	Asp	Ala	Leu	Ser	Thr	Ile	Phe	Asn	Ala	Ala	Gly	Leu	Asn	His	Leu
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172	Asp	Gln	Val	Leu	Leu	Pro	Glu	Val	Ser	Thr	Pro	Thr	Val	Gly	Ile	Glu
173				405					410					415		
175	Ser	Pro	Gln	Thr	Pro	Gln	Ala	Lys	Pro	Ser	Val	Ser	Asp	Pro	Arg	Ser
176				420					425					430		
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179			435					440					445			
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185 <210> SEQ ID NO: 3
186 <211> LENGTH: 176
187 <212> TYPE: PRT
188 <213> ORGANISM: Vibrio anguillarum
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195           20           25           30
197 Phe Ala Ile Asn Ser Tyr Ser Trp Gly Gly Ala Arg Asn Val Ala Met
198           35           40           45
200 Asp Ile Gly Asn Gly Thr Asn Ala Asp Ser Gly Met Val Gly Val Ser
201           50           55           60
203 Glu Val Ser Val Thr Lys Glu Val Asp Gly Ala Ser Glu Asp Leu Leu
204           65           70           75           80
206 Ser Tyr Leu Phe Asn Pro Gly Lys Asp Gly Lys Thr Val Glu Val Ala
207           85           90           95
209 Phe Thr Lys Pro Ser Asn Asp Gly Gln Gly Ala Asp Val Tyr Phe Gln
210           100          105          110
212 Val Lys Leu Glu Lys Ala Arg Leu Val Ser Tyr Asn Val Ser Gly Thr
213           115          120          125
215 Asp Gly Ser Gln Pro Tyr Glu Ser Leu Ser Leu Ser Tyr Thr Ser Ile
216           130          135          140
218 Ser Gln Lys His His Tyr Glu Lys Glu Gly Glu Leu Gln Ser Gly
219           145          150          155          160
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222           165          170          175
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225 <211> LENGTH: 117
226 <212> TYPE: PRT
227 <213> ORGANISM: Vibrio anguillarum
229 <220> FEATURE:
230 <221> NAME/KEY: MOD_RES
231 <222> LOCATION: (113)
232 <223> OTHER INFORMATION: Variable amino acid
234 <400> SEQUENCE: 4
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242           35           40           45
244 Ser Glu Lys Val Asp Leu Glu Arg Glu Phe Thr Gly Ile Asp Lys
245           50           55           60
247 Asp Asn Phe Asp Thr Val Met Gly Gln Ile His Pro Arg Leu Ser Tyr
248           65           70           75           80
250 Lys Val Asp Asn Lys Leu Ala Asn Asp Asp Ser Gln Phe Glu Val Asn
251           85           90           95
253 Leu Ser Leu Arg Ser Met Lys Asp Phe His Pro Glu Asn Leu Val Asp

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254	100	105	110
W--> 256 Xaa Ile Glu Pro Leu			
257	115		

VERIFICATION SUMMARY

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Input Set : A:\5112.app

Output Set: N:\CRF3\04112002\I915706A.raw

L:88 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1

L:256 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4